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Until recently, Mrs. Visher was Specialist for Geography and Conservation in the United States Office of Education. She formerly taught in Peabody College, Nashville, Tennessee, and Murray State College, Murray, Kentucky. Previous papers in the JOURNAL by this author include "Conservation Education or Tragedy," January 1949, and "Conservation—An Immediate Concern to All Nations," September 1950.

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Dr. Calef, University of Chicago, is especially interested in Physical Geography, Geography of the Western United States, and Conservation. An article entitled "Student Mapping of an Area of Multi-Story Buildings" appeared in the September 1951 issue. He contributed Chapter 8, "To Understand the Nature of Conservation," in *Geographic Approaches to Social Education.*

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VOLUME LI MARCH, 1952 NUMBER 3

CONSERVATION EDUCATION THRU THE SOCIAL STUDIES

HALENE HATCHER VISHER
Bloomington, Indiana

Progressively increasing recognition that the wise use of resources is a major factor in improving human welfare and in establishing conditions favorable for world peace suggests the importance of providing effective conservation education. Neither the need for the conservation of natural resources nor the recognition of the necessity for conservation education is of recent origin. Yet, despite early warnings, the chief approach to resource-use problems has been too long that of legislation to provide protection for a particular resource that happened to be in jeopardy at the time. Today, however, there is increasing awareness of the fact that conservation problems cannot be legislated out of existence. Both sound legislation and wise resource use depend upon enlightened, self-disciplined citizens who realize man's dependence upon resources, see the whole problem, are sensitive to resource misuse or abuse, and are willing and able to work in a democratic manner to develop continuous programs of conservation. Until a strong desire for conservation exists in the minds of men, conservation goals cannot be attained. But the public opinion, upon which effective conservation depends, can be created thru education.

This viewpoint was expressed by J. R. Whitaker in a recent article in which he states: "I am convinced, indeed, that the greatest need for the near future is not so much for knowledge of how to manage resources as to get men to apply the knowledge we have. This requires a better understanding of the relation of human behavior to resource destruction and conservation. . . . In the last analysis," he continues, "resource management is a matter of human behavior." To be sure, human behavior must be conditioned by effective education if conservation is to become a potent force—

a way of living—fashioning our patterns of thought and of action relative to resource wealth. Each individual's use of material wealth should be based upon wisdom and judgment if lives are to become increasingly enriched and free.

Recent impetus to conservation education has resulted from the growing, tragic inroads that are being made upon our natural resources, not only thru unwise use but also thru increased demands. We are compelled to choose between safeguarding the natural-resource base or resigning ourselves to progressively lower standards of living. It is urgent that a conservation consciousness permeate our whole educational program. Schools must accept the challenge to further an understanding of the natural environment and to help citizens recognize their personal responsibility for wiser adjustments to the earth. To this challenge, the social studies teachers, along with all who influence public opinion, must give their best.

Initial Requisites for an Effective Conservation Education Program

To integrate conservation into a program of general education for intelligent, responsible citizenship, a clear and comprehensive definition of conservation which is understood and accepted by all is needed. Conservation *is not* the hoarding or saving of natural wealth. It implies development as much as it does protection. It calls for farsighted, wise use of resources with all possible elimination of waste. It calls for renewal or restoration of renewable resources rather than the philosophy of "get while the getting is good." It also involves continuous effort to make full use of improved methods and techniques in the development and utilization of resources. Briefly, conservation means the wisest possible use of *all* of our resources for the *permanent* good of *all* the people.

Another great need in conservation education is that those engaged in its development possess an adequate, clear-cut understanding of "conservation education." Some teachers believe they are teaching conservation by merely taking pupils outside the classroom to enjoy the beauties of nature. A recent, detailed description of out-of-doors activities in a so-called "conservation unit" is an example. Pupils, equipped with cameras, enjoyed the beauty of the glistening sun on ice-encased, broken tree limbs, entangled communication wires, and drooping boughs. The pictures provided

material for the making of scrapbooks, for projecting school activities into discussions in the home, and for developing interesting and, no doubt, worthwhile language arts units. A lot of integrated activity! but little of this pertains to conservation. In the first place, the damage by the ice storm to trees and other material wealth was not man-induced or man aggravated. Man's activities were not related to the damage. At all points, ecological relationships—the real basis of conservation education—were lacking. Such studies not only fail to "hit the mark" of conservation education, but mislead the pupils as to what conservation means.

All teachers need to view conservation education as the sum of all learning experiences which result in a better understanding of and an appreciation for the nature and complexity of the natural environment; increased recognition of the dependency of human welfare upon a wise adjustment to the earth; a sensitivity to resource misuse; a desirable combination of favorable attitudes toward the wise use of the earth; and a feeling of individual responsibility for its continued productiveness and well being. Conservation education seeks to establish a conservation consciousness—the impetus for changing behavior and for stimulating individual participation in making, and in causing to be made, intelligent choices to further the wise use of natural resources. Conservation education, in the words of Ollie E. Fink, "prepares man to understand his environment and to continue to live there happily and usefully."

The great objective of conservation education is the betterment of human welfare thru the development of social groups and individual citizens with attitudes, habits, and patterns of behavior that make conservation "a way of living." Today, the need is for citizens in whom an attitude and spirit of conservation become as much a part of the individual personality as courtesy, good manners, and honesty.

IMPLEMENTING EFFECTIVE CONSERVATION EDUCATION

Tho conservation education should be a concern of the entire faculty, social studies teachers are in a unique position for developing, enriching, and extending conservation education in both the school program and community life. For meeting this responsibility. the following suggestions may prove of value:

1. Recognize the role of the teacher as that of counselor and guide.

Resource-use problems cut across practically every phase of human activity and across the traditional fields of knowledge. Requisite knowledge and understandings cannot be acquired once and for all. Ecological relations vary. Scientific and technological knowledge increases, and opportunities for application multiply. Social, economic, and cultural conditions change. Consequently the teacher must view conservation education as *continuous learning*. The attitude of the teacher is, therefore, extremely important. For best results he must:

a. Be effective in the use of the problem-solving approach to resource-use education.
b. Be willing to raise questions and to experiment along with the pupils.
c. Be willing to make careful, realistic plans for first-hand, learning experiences in the field.
d. Be sensitive to opportunities for stimulating the widest possible participation in co-operatively planning and developing conservation activity programs.

The teacher will find his most effective role to be that of learner rather than specialist, that of counselor and guide rather than director.

2. Give the proper motivation.

To be of lasting worth, conservation education should not be based upon emotional appeal. Rather, the approach should take into account underlying values and principles related to the economic and cultural welfare of the people and to the individual's sense of patriotism and of good stewardship. The social studies afford countless opportunities for viewing wise resource use as a practical as well as an ethical responsibility.

3. Emphasize contributions that the individual can make.

At all levels of learning, conservation education should clearly point out the contributions which the individual can make. His daily choices relative to efficient use of resources and his efforts to further desirable regulations, practices, and policies can contribute much toward bettering human welfare. To be able to use wisely the resources and to influence others to do so, the individual must be:

a. Aware of the interrelationships existing between his treatment of material wealth and his ultimate well-being.
b. Intolerant toward unnecessary destruction of resources.
c. Appreciative of the aesthetic and recreational values of the natural landscape and aware of the importance of protecting them.
d. Strongly desirous of working by democratic rather than autocratic methods.
e. Concerned about his personal use of material wealth, irrespective of ownership. This is basically dependent upon vitalized citizenship education, a primary con-

cern of the social studies. The urban child in the rented apartment; the class picnicking in the public park; the student with a State-owned text; the adolescent with a knife at the soda counter; the careless smoker in the woods; the tenant in the cotton field; the owner of cattle grazing in a rented pasture—all these and countless others need not only to be aware of the value of material wealth, but also to be imbued with a functioning spirit of good citizenship.

f. Considerate of the rights of society and critical of the selfish, anti-social acts of those who exploit resources.

g. Mindful of the importance of full knowledge of ecological relationships of all the resources before launching conservation projects.

To make the individual sensitive to his opportunities for wisely using resources, the teacher should select approaches which make sense in terms of the person's environment—geographic, economic, social, and cultural. The urban dweller, for example, may be keenly interested in projects for controlling the pollution of water or air, for safeguarding scenic and recreational values, for maintaining adequate domestic water supply, for developing water power, and for making better use of many unsightly spots within the city. The rural individual, on the other hand, may be chiefly interested in problems of local impairment of the resources upon which he depends largely for his subsistence. Hence, his prime concern may relate to the more efficient use of the soil, native vegetation, water supply, and wildlife.

With suitable approaches, the alert, properly trained social studies teacher will help individuals to recognize opportunities for furthering wise use of resources. Among such uses are the beautification of the school lawn and the proper disposal of picnic litter; the control of erosion in the school yard and the management or development of a school or community forest; participation in the activities of a demonstration farm, garden plot, or wildlife refuge and making a survey to discover available resource people and agencies; the protection of school or personal property and participation in a community-school conservation project. Thus, there are many opportunities for individuals to contribute to the conservation program. Widespread participation is essential if conservation education is to be a rule of conduct, a principle for the present life of the pupil.

4. Stress economic and cultural aspects of wise use of resources.

Directly relating the economic and cultural problems of the people to the wise use or abuse of resources places significance on present values of conservation practices rather than on those of the future alone. This is especially important in dealing with young

people. Comparative studies, graphically presented, will not only enrich the learning experience, but will also afford the best means of relating either resource misuse or deficiency to the daily problems of the people. Opportunities are found on every hand for those in the social studies to relate the type of housing, income, educational facilities, etc., to the nature of vital resources. With this emphasis, the relationship between better living and wise use of resources becomes evident. To relate conditions resulting from man's misuse of resources to the movements of people, to their standard of living, and to the origin of wars serves to illuminate history and to make apparent our dependence upon a productive resource foundation. The earth is Mother of us all, and her continued productiveness is a vital concern to us all.

5. Include educative experience for adults as well as for children and youth.

To be fully effective, the conservation program must provide for active participation of all age groups, and the different phases of the program must be related as closely as possible to each other. Indeed, upon lay citizens rests major responsibility for immediately implementing active conservation programs and for making desirable regulations.

The following suggestions may prove of value in providing educative experiences for adults and in bringing them into closer relation to the daily activities of the school:

a. Project the organization of a community-school study of conservation for making a positive, creative approach to the problem of using wisely all resources.
b. Make a survey of the community to determine its major resource-use problems, and to locate the most capable leaders and specialists who can contribute to the program.
c. Stimulate civic clubs to focus attention on critical resource-use problems; aid in planning and developing practical projects related to conservation in the home, the school, and the community; and sponsor radio programs featuring outstanding speakers, forum discussions, and reports of on-going projects.
d. Co-operate with the Soil Conservation Service and Forest Service personnel, with the vocational agriculture teachers and county agents, and with Extension Service specialists in developing demonstration projects in the community.
e. In agricultural areas, encourage and assist in the organization of a local soil conservation district, if none exists. The district will afford an excellent example of "democracy at work."
f. Prepare exhibits—soil maps and soil profiles, cartoons, posters, scrapbooks, model farm lay-outs—for display in community stores, in the school, or in other appropriate centers.
g. Assist in planning a section in the community or school library to be devoted to an adequate collection of sound, up-to-date conservation materials.

h. Plan co-operatively faculty-parent-pupil participation programs for the radio, for PTA meetings, and for other concerned groups.
i. Make appropriate use of the press.

6. Relate learning experiences to the central theme of conservation and to the major educational objectives.

In selecting, developing, or using content material and in projecting activity-centered experiences, participants must always keep in mind the real heart of conservation—the wise use of resources and means of reducing their impairment.

7. Make adequate and effective use of direct study in the field.

Effective field teaching requires careful planning. Too often, as Paul B. Sears expressed it, "Everything that comes along to catch the eye is pointed out and labelled—but with no real distinction. In the end the disciples are aware that they have seen many things. They are impressed, possibly fatigued by the muscular scholarship of their guide. But they are left with no sense of the unity and interrelatedness of what they have seen. They have the pieces, but not the picture which those pieces form." It is of paramount importance that the interrelatedness of the component parts of nature be emphasized and that we "see ourselves as a part of the landscape about us, dependent upon it and responsible for its continuing health and productiveness."

Skillfully projected field experiences offer splendid opportunities for relating the nature of the resource-base to the welfare of the people. Correlations may be drawn, for example, between soil erosion and housing: soil erosion control—good housing; unrestrained soil erosion—poor housing. Thus, the field excursions enable participants to see for themselves some of the problems of local conservation which later may be studied in their regional, national, and world perspective. Certainly, for the elementary grades, first-hand experience in the field is the key to effective conservation education.

Some learning experiences may be made more meaningful by even very short trips to the schoolyard or the immediate neighborhood. Others may be enriched by longer trips. In either case, the findings in the field may reveal needed experiments. They should give rise to numerous questions which encourage the learners to use suitable printed materials. They may reveal a need for follow-up field trips or a need for conferring with specialists on various aspects of conservation.

8. Build a broad, well-balanced program.

It is highly desirable that conservation education treat wise use of resources broadly rather than by merely isolated segments. The shift of emphasis needs to be made from the narrow, piece-meal approach thru the study of forests, soils, wildlife, etc., each in isolation, to that of a wise use of *all* resources. The broader approach makes for a better understanding of ecological relationships, a requisite to the realization of the fact that all natural resources are an interdependent whole and that injury to any one element spreads to others, both near and remote. Social studies classes offer many opportunities for developing fundamental concepts basic to an understanding of the oneness of nature. Well-trained social studies teachers are in excellent position to contribute substantially to a broad, well-balanced program of conservation education thruout the school and community.

9. Utilize the best available teaching materials.

To relate adequately classroom learnings to those gained by direct contact with conservation problems and to make all educative experiences vivid and meaningful, the best use must be made of available teaching aids. Sketch maps and regional diagrams, various types of resource maps, charts and maps showing related land uses, drainage basins, ground water conditions, and other related geographic features—all have their unique value. Carefully selected slides, motion pictures, cartoons, film strips, charts, recordings, and other aids should be appropriately used. Suitable reading materials—books, magazines, pamphlets, and community resource studies—are indispensable.

AND LAST

To become the potent force substantially influencing behavior patterns, conservation must be made an all-pervasive element with its ideas and principles permeating the whole educational program. Moreover, within such suitable subject areas as the social studies, special emphasis needs to be made not only by teaching conservation as an integral part of geography, history, civics, sociology, and economics, but also by developing at desirable times carefully planned units which treat the whole problem of conservation. In a democratic society where personal rights have been highly emphasized, the need, as never before, is for conservation conscious citizens, fully aware of the responsibilities they *must* assume if they wish to continue to enjoy their freedom and privileges.

SPECIAL GEOGRAPHIC CONTRIBUTIONS TO CONSERVATION EDUCATION*

WESLEY CALEF
University of Chicago

The initial phases of the ensuing discussion are slightly theoretical and may appear to have little relevance to the overt and practical actions actually carried on in the class rooms where conservation education is being carried forward. However, the failure either to grasp the concept here presented or to recognize the implications of the idea has resulted in a lopsided development of both teaching and research in conservation in the United States. Moreover, this distortion has seriously reduced the efficacy of conservation education.

It may be most efficient to begin by stating the basic assertion which the subsequent argument is attempting to prove. The fundamental viewpoint is that *resources exist only within the framework of a society, and consideration of resource management apart from the society in which the resources exist is meaningless and unrealistic.*

Think if you will of some particular natural resource. Choose any resource you wish; the total world forest resources, or a specific farmer's woodlot; the rivers of North America, or a specific minor tributary of some stream; the soils of Africa, or a particular Illinois farmer's field; a specific herd of Elk, or an individual copper deposit. The instant you visualize any particular resource it assumes a location or position on the surface of the Earth. It assumes a position and a relationship with one or more of our world societies. It assumes a relationship with respect to national states, with respect to various economic systems, with reference to religious groups, with respect to methods of communications, with references to concentrations of population. In short, it becomes immersed in the total cultural milieu of our time.

By definition a resource must be something that a society (either actual or visualized) can *use* for attaining its ends. Use is the essence of the term; otherwise some more general word such as "matter" or "material" would be equally applicable. If some-

* This paper is essentially an expansion of the idea (expressed very tersely because of space limitations) in the fourth conclusion in: W. Calef, "To Understand the Nature of Conservation." *Geographic Approaches to Social Education.* Nineteenth Yearbook—National Council for the Social Studies. Washington, 1948.

thing is thought to have utility, either present or potential, it only then becomes a resource. A thing is not a resource until some society recognizes its actual or potential utility for achieving some social end. But the idea or the concept of utility is a cultural concept; not a physical concept. Inevitably by the very process of calling something a resource we thereby place it within the framework of some society or culture.

A geologist can treat a copper deposit as tho it had no relationship to society. He may study its formation as an episode in the history of the earth, or describe it as an unusual feature of part of the earth's crust. But if we call a copper deposit a resource we thereby of necessity think of it in terms of use by a society.

Every society, however, is organized in some particular way to achieve the acceptable ends of the group by utilizing the resources they know they possess by socially approved methods and organizations. Anything then within the total cultural framework that affects the way in which things are done or the ends for which the society is striving will have an effect on both the actual and potential use of resources. The religious views of a society, a society's tools, its economic organization, its social structure and values, its political institutions, its degree of literacy, may, any or all of them, influence the use of its resources.

Present Procedures in Conservation Education

What generally has been the analytical procedure in dealing with resource problems? To a greater or lesser extent resource management problems have been abstracted from their setting in the society in which they exist. Attention has been focused on the technological aspects of resource management. Description of the natural characteristics of the resource is emphasized. The physical changes in or the extent of depletion of the resource as a result of use is commonly stressed. Often the exposition of the technical changes in procedure necessary to halt the deterioration of the resource or alter its physical condition for the better are presented in astonishing detail. If both the procedure and textbook are good there may also be included a few selected items from the cultural structure which obviously bear directly on the effectuation of these physical processes. But almost invariably these cultural items are few because of the teachers' conviction that the central problems already have been covered.

This situation is easily understandable. It is impossible to have a grasp of a resource conservation problem unless the physical characteristics of the resource, the present resource situation, and the major technological changes requisite to proper management are understood. Since time is short and there are many kinds of resources, once the technological aspects have been covered for a resource the attention of the class is turned to another and then another resource. Resource management, as the initial sections of this discussion have pointed out, is as much a social problem as a physical one; but consideration of the cultural aspects has been neglected almost to the point of being ignored.

One of the fundamental cultural or social problems of resource management involves the question of what the State *should* be able to enforce with respect to the ownership and management of a natural resource. Note that the question is not what *can* the State do but what *should* it do. The whole management program of a resource will take its direction from whatever views on this question guide the inception of the program. Yet who has ever heard this matter discussed in a conservation class room? No decision on the question need or should be reached; but it is invaluable for a student to see how the views on such a question will inevitably foreclose the possibility of certain kinds of action and guide management along other lines; how disagreement on a fundamental question of this sort will cause bitter controversies as to management procedures even when there is agreement as to the desirable physical solution to the problem; how, if both viewpoints are supported by powerful groups, compromise solution (often-times internally antipathetic) may result from the tension caused by the two conflicting viewpoints.

Examples occur on every hand. A powerful group of citizens believes passionately that the nation's land should be in private hands and not owned by the government. Another group holds with equal conviction the view that the government as the agent of all the people should acquire much more land than it now owns in order to insure its utilization for the common interest. Each group attacks or supports any government program involving the disposal or acquisition of land in terms of its effects on land ownership *per se,* not on the basis of the stated ultimate objectives of the program. The attitude of these opposing groups profoundly affects the forestry program, grazing land use administration, and the

development of our National outdoor recreational program.

The fact that one contending group may be politically weak and its views out of favor or unheard is of equal importance simply because the dominance of another point of view directs the conservation program along certain channels and only along those channels. For example, the majority opinion in the United States has directed the management of our mineral resources and our agricultural land along certain special lines and has largely closed the door to alternative kinds of programs. This does not demonstrate the superiority of our special approach, but it does indicate that unanimity of ideas will produce one set of solutions and close the door to others.

The point to be emphasized is not the details of the particular illustration used, but the idea that the opinions and decisions on this essentially philosophical or political question inevitably form a background that must be understood and reckoned with in realistically dealing with any resource management problem.

The illustrations chosen are just one of many cultural forces impinging on any resource management problem. But these have been neglected. There has been a consistent and almost complete omission of such subjects. To assign primacy to the technological problem is to relegate the social problems to an ancillary or peripheral status, or to remove them entirely from the student's purview. Part of the problem has been mistaken for the whole problem. The discussions have separated from its social setting a problem which is essentially meaningless except as it relates to society.

In effect what has been done is to give the student a view of a segment of various resource problems and seldom does he achieve a comprehensive view of the full, complex problem of the management of any resource. But what is even more serious is the fact that he is largely unaware that the omitted factors have any relationship to this sort of problem.

Results of the Past Orientation of Conservation Education

The literature of conservation echoes and re-echoes a doleful refrain of frustration—we know how properly to manage our resources but our resources are not properly managed. After nearly a half-century of continuous conservation research and education

in the United States one of our foremost students of conservation problems can say with complete justification that "the greatest need for the near future is . . . to get men to apply the knowledge we have."[1]

This situation is an inevitable result of the past orientation of conservation education. What happens to our students, whether university conservation major or a high school graduate who has studied a few "units" in conservation, when subsequently confronted with a real conservation problem on which he is expected to act or to hold a defensible opinion? He finds the problem totally enmeshed in an array of cultural influences few or none of which he has been taught to view as being part of a conservation problem. The normal reaction for him is to become bewildered and uncertain or to dismiss such cultural factors as irrelevant. He is confused and irresolute. If citizens and technicians who have been exposed to conservation education react thusly, it seems unreasonable to expect anything more from the general public.

THE OPPORTUNITY OF GEOGRAPHY

The imperative need in resource management today is to see conservation problems as the complex wholes they are. This is true thruout the whole range of the conservation scene from the efforts of the highest-paid professional conservationist to the first studies of the wholly uninitiated student.

Geography is the only discipline that by the logic of its methodology is committed to the study of the full range of heterogeneous and unassorted items both physical and cultural as they exist in area. Moreover, geographers are the only scientists whose training specifically prepares them to approach a problem in this way. If any scholarly discipline is prepared to carry on research and instruction emphasizing a comprehensive approach to resource problems, that discipline is Geography.

Inasmuch as geographers have assumed responsibility for a large segment of the total conservation education program and since they are presumably best trained to furnish exactly the type

[1] Whitaker, J. R., "Conservation and the College Professor," *Peabody Journal of Education,* May 1950, 331. The statement would be more accurate if "technological" had been inserted before the word "knowledge." Our knowledge of appropriate social instruments for resource management is very scanty, and only in the past few years have the systematic social scientists begun the investigation of such problems.

of information and approach that is most critically needed it behooves us to examine most critically our past procedures. Geographers in both research work and educational work have made at least two errors. First, on whatever level of work they have been engaged they have been too concerned with dealing with a variety of resources; and second, they have depended far too much on an unintegrated compilation of the work of the systematic scientists in the resource field.

The proposals that follow are applicable to the complete range of conservation education—from grade school to graduate work in a university. Everything cannot be taught at any level. It is necessary to abandon the notion that complete or even wide coverage of the various resource fields is an attainable or especially desirable objective. Instead it is preferable to take one or two or three resources within restricted areal limits and attempt to formulate an integrated, comprehensive view of the full range of factors intimately associated with the management of this resource. Obviously the depth of penetration and the complexity of the problems that can be dealt with will need to be adjusted to the background and level-of-maturity of the students. But the approach will be the same at every level.

Materials for such an educational approach are not now available. But the geographic profession will have to provide them. Much of the basic information is available in scattered places in the literature of the systematic sciences and of conservation. Some of it has been gathered together in useful compendiums. Moreover, the systematic sciences—especially, it is to be hoped, the systematic social sciences—will provide additional material as times goes on. But the history of the development of conservation will not justify the expectation that the systematic sciences will provide the integrated, comprehensive approach which is so badly needed at present. It is not the function nor the responsibility of the systematic scientist to present such a treatment of the data. It is the function of the geographer.

Geographers today are faced with the opportunity of making the most significant contributions in conservation research and conservation education that will be available in the next decade. But the contribution if it is to be made will need to consist of very broad and deeply penetrating studies of the management of a single resource within restricted areal limits. To produce such

studies will require patient ransacking of the literature of both the social and natural sciences, of the daily press, and of popular magazines for the fragments of information and ideas which will help in building the complete structure. It will almost certainly necessitate going into the field much more extensively than has been the practice in the past, in order by extensive interview and careful observation to fill in the gaps in the literature, and to test and particularize the generalizations of the systematic sciences. But if by these endeavors geographers adequately discharge the philosophical pretensions of their science I suggest that they will have made the greatest possible contributions to conservation knowledge and education that is possible at this stage of the development of the subject.

SOME IMPLICATIONS OF RESOURCE-USE EDUCATION FOR GEOGRAPHERS[1]

HENRY F. BECKER
Florida State University, Tallahassee, Florida

My purpose here is to show why resource-use education needs geographers and why geographers need it. Hence it will be necessary first to attempt to characterize and describe briefly what resource-use education is. Before doing so, I wish to state three assumptions that will, I hope, prevent misunderstanding.

1. I am not urging that the whole geography program be focused on resource-use education. Resource-use education should not replace any major aspects of our present programs. It should be used instead to enlarge our scope and enrich our educational effort in various ways.
2. All members of a geography staff need not make resource-use education a major concern. All or most of them ought to have some contact with it.
3. Resource-use education is suitable not only to teachers' colleges but is the legitimate concern of every department of geography.

[1] This article is based on a paper read at the fall meeting of the Southeast Division of the Association of American Geographers in Lexington, Kentucky, November 17-18, 1950.

WHAT IS RESOURCE-USE EDUCATION?

Stating a definition of resource-use education is as difficult and unprofitable as defining geography. More effective perhaps is a statement of the basic concepts or beliefs involved—which, together with the programs developed to implement them, constitute resource-use education in action.

Fourteen southern states are active in a south-wide program of resource-use education. Each state has its own program based on the following statement of philosophy:[2]

"1. The purpose of education and, therefore of the school, is to ensure continuing improvement in living for all the people, by increasing their competence and understanding and by improving the communities and the society in which they live. The teaching of knowledge, skills, and attitudes is an indispensable means to this end; it assumes realistic meaning for modern society within this framework of purpose.

"2. The school must serve society as constant collector, interpreter, and disseminator of scientific information and principles concerning man and his relationships with his environment. It must help children, youth, and adults to understand and appreciate the significance of such information and principles and the methods by which they may be applied.

"3. The school must be so conducted as to demonstrate, teach, and realize in action the principles of democratic problem-solving and of fundamental human relations. The total program should be co-operatively planned by teachers, administrators, supervisors, pupils, parents, and community leaders. The school must assist community agencies and leaders in understanding and practicing democratic processes. It must consciously attempt to build in its learners, youth and adult, the inspiration, understanding, and skills without which democracy cannot succeed.

"4. The school must help to develop attitudes and habits of social responsibility and a spirit of public stewardship toward the use of resources. Each individual should become fully aware of his stake in what happens to resources and should identify himself with the effort to improve their use.

"5. The school is a dynamic, creative participant in community life. The problems of community life are educational problems because they require the development of human competences to meet them. The school identifies and responds to these needs. It works with other agencies and community leaders in developing a whole view of the community and in planning to improve life in the community.

"6. Concern with and participation in community processes must never be allowed to circumscribe the horizons of the school program. It is crucially important in our world that these experiences be broadened into understanding of state, regional, national and world resources and problems. The school program must make conscious provision to see that this world horizon is seen and realistically studied."

[2] *Learning by Living: Education for Wise Use of Resources.* Southern States Work Conference and Committee on Southern Regional Studies and Education 1950, 28-29. (Available from Florida State Department of Education, Tallahassee, Florida for 50 cents.)

Of major significance are the following basic assumptions:

1. Societies are created out of human, natural, and social resources. Any or all of these resources can be misused to man's detriment or they can be wisely used for the betterment of human living in the long-time, more permanent view.
2. The proper use of all resources for the common good in a society involves the solution of numerous problems which constitute obstacles to social progress. The problem-solving process when engaged in co-operatively in a grass-roots manner by the people concerned is a democratic process.
3. This democratic problem solving process not only solves problems but it also develops men of a higher caliber. As evidence to support both this point and the previous one, geographers frequently cite the performance of the Scandinavian countries of Europe, praising not only the quality of the life they have created with limited resources but also the quality of the people themselves. Perhaps the most important outcome of the democratic process is an understanding of the process and the conviction that it will work in solving problems. This idea is recognized by the southern group that prepared the bulletin *Learning by Living:*[3]

   "Man's intelligence is kept alive and growing thru use in facing and solving problems. Man's intelligence dies and withers with an attitude of apathy or of defeatism. Problems are shunned or ignored, man's powers decrease, the patterns of destructive exploitation are allowed to spread, and the base of living shrinks and contracts. These things have happened in the United States; they are intensified in the South.

   "Man's intelligence and his spirit, all life, grow in a process of interaction with environment. Such growth and development result from continuous adjustment, and the conception of new and fruitful ways of doing things."
4. The problem solving process is essentially the application of certain systematic social and scientific techniques. As such it calls for:
   a. Contributions from scientists, social scientists, specialists of various kinds, educators, community leaders, citizens, and everyone else.
   b. The translation of research contributions into readable and usable form.
   c. The channeling of the findings of research into education.
   d. General recognition by everyone concerned, but especially by leaders, that authoritarian scientific solution by scientific experts will defeat social goals in a democracy. Leadership must consist in helping people learn how to use for themselves the results of scientific investigation and to take the initiative in calling on experts for aid. Many a report made by an outside investigating committee gathers dust on the shelves because the people concerned had no part in making it.
   e. The development of certain understandings, attitudes, competences, and practices on the part of all the people if the process is to be democratically operated. Some of these are:
      1) The ability to recognize problems.
      2) The development of concern about problems.
      3) Willingness to face problems squarely.
      4) Ability to collect, interpret, and use information needed.
      5) Understanding of how problems are solved: of the scientific method.
      6) Confidence in the co-operative attack on problems.
5. The education necessary for such a program must begin as early as possible and

[3] Ibid., 24.

must take place on all levels. It must include adult education, education for teachers, and education for specialists of various kinds.[4]

WHY RESOURCE-USE EDUCATION NEEDS GEOGRAPHERS

There are many reasons why resource-use education needs geographers. Perhaps the major over-all reason is because at their best geographers are synthesizers of knowledge basic to the task outlined above. This happy fact is probably due to the nature of their training and of their function of bridging the gap between man or the social sciences on the one hand, and nature or the natural sciences on the other. In some way most geographers have been saved from the extreme degree of specialization fatal to the integrative faculty. Evidence of this peculiar ability is plentiful. A few examples must suffice. One is the well-known synthesizing role of geographers in the early planning stages of T.V.A. Another is the generally recognized integrative leadership provided in the Office of Strategic Services during World War II.

Two other examples are described in an article in the Winter 1946 *Bulletin of the American Association of University Professors*.[5] The first of these examples has to do with geographers in the Army Area Study Curricula:

"The special contribution that geography could make to integrated area study derived from its generic character. Geography is the regional science par excellence; it should be central to area study. . . .

". . . To integrated area study he (the geographer) brought a way of viewing human phenomena in their spatial relations, as exemplified in his pre-war regional courses on major continental areas, that he finds as difficult to explain as the anthropologist finds in trying to communicate his field method to one who has not been trained in it. Both are based on field research, which holds the future of integrated area study."

The second example cited in this article is concerned with the role of geographers in a Michigan land utilization program:

". . . The Institute of Public Administration land utilization program for Northern Michigan, in the University of Michigan Graduate School, attempted before the war to see what a group of social scientists drawn from sociology, forestry, economics, geography, and political science could do in the study of a small area. The purpose of the program was to experiment with methods and to integrate the work of various social

[4] The term "conservation" is often used to designate an educational approach of the type characterized here. The writer holds no brief for one label or the other. The important point is that the philosophy and the action programs be broadly enough conceived to meet human needs.

[5] Fenton, William Nelson, "Integration of Geography and Anthropology in Army Area Study Curricula." *Bulletin of the American Association of University Professors*, Winter 1946, 699-702.

sciences for the graduate students in a joint seminar. The seminar meetings entailed much discussion and necessitated sharing points of view and field observations made when students were in camps for two and three weeks at a time. Someone had to have the over-all view. Experience gained in the intensive study of this small area indicated that geographers on the team, because they attempted to deal with a wider variety of phenomena than others of the social scientists, could function in an integrating capacity. From field work the geographer acquires a feel for the land, which is unverbalized and derives from field courses, from teaching students to make surveys, learning how to analyse and integrate, not just the soil, the land use and the physiography, but something more that no one else does. His intuition is the concept of space relationships that is inherent in map making."

Below are stated additional reasons why the geographer is needed in resource-use education. The facts stated under these seven headings also help to explain the over-all integrative function already described.

1. The geographer possesses much significant knowledge about people or human resources: how many, rate of growth, distribution, and some of the reasons for this distribution. He is familiar with many of the problems faced by these people.
2. The geographer is well informed about the natural resources from which people must secure their livings and on which they must base their societies; he knows about renewable and non-renewable resources and the penalties of wasting and destroying these resources. In short he is familiar with, understands, and takes for granted the long view necessary to the permanence of a society. Many scientists and educators lack these insights.
3. The geographer is coming more and more to understand social resources as the means of getting jobs done; to recognize that the kind of social institutions in any spot are not necessarily the by-product of the natural environment, but may actually be the means of determining the ways and hence the results of using these resources. In short, to realize that an idea put to work may do either great harm or great good and that institutions must change with changing needs.
4. The geographer is familiar with and accepts readjustment as a dynamic social process. As he studies this process at work in the world he develops understanding and tolerance for various peoples, their achievements and their problems. As a result he becomes world-minded in the sense of having thought about the whole earth in terms of its people and their use of resources. This point of view is needed to keep a resource-use education program broad and aware of world implications.
5. The geographer knows where and how to secure information of various kinds from library and field and how to present it effectively with the aid of maps and graphs.
6. As a result of all of the above stated attributes, the geographer tends to be broad-minded, unafraid of ideas, and reasonably adaptable. By which I mean that he is less set in his ways and more ready to entertain a new slant on an old matter than some. Perhaps that is the good fortune he gains from the still changing, evolving character of his subject.
7. Another result of these attributes is that the geographer has a very real and valuable contribution to make to both general education at all levels for all citizens and prospective citizens and to special education for a much smaller number of people.

Will you agree that I have proven the need of resource-use education or any other program for this "paragon of virtues" labelled geographer? It is my honest conviction that we can contribute heavily to the success of the educational movement.

Why Geographers Need Resource-Use Education

Perhaps I can best make clear my thinking on why and how geographers benefit from participation in resource-use education by discussing the Florida program, in which geographers have been active since its inception. I shall confine my remarks to five phases of this program. It will be noted that a discussion of these phases also reveals the contributions made by geographers to such a program and supports the claim already made that resource-use education needs geographers.

The college and university aspect. A recognized need in a successful resource-use education program is better education for citizens and for prospective teachers. To secure this improvement requires a re-examination of the general education offerings required of all students and of the in-service teacher education program. Geography, by its very nature, participates in both. Three methods have been followed in seeking improvement. One is the creation in each of several institutions of a resource-use education committee composed of representatives of the various phases of college work involved. Geographers, if the institutions have any, always have been included and in at least three cases have served as chairman of the committee.

A second device is inter-institutional conferences in which representatives of all colleges and universities participate. The most lengthy of these was held for one week at Daytona Beach in the summer of 1945; another similar one is in prospect. Programs in various institutions are compared and a study made of the problems involved.

The third method employed is the setting up of actual course offerings. These have taken various forms and have been offered in various departments, most commonly in geography and education. Some of the best ones I know are taught by geographers but with the blessing and close co-operation of schools of education. Both state universities offer geography courses analyzing the use of resources in the state and in the local counties.

In all of this institutional activity, the geographer has grown

in prestige, has gained valuable new experiences and has discovered that some of his colleagues share his philosophy and his aims. Incidentally he probably has also gained some students.

The regional aspect. On this level the nature and direction of the program are determined. Participation in conferences in which the aims and objectives are set up and ways and means for their implementation devised has many advantages to the geographer. He learns what scientists, social scientists, educators, and government workers think about the South and its problems. He is stimulated, impressed, and sometimes even irritated by their ideas and approaches. He contributes his own point of view and makes clear to others, usually greatly to their surprise, that the central ideas involved have for years been part of the geographer's stock in trade.

The state organization aspect. Each state in the southern group has had some type of organization to stimulate resource-use education on various levels. In Florida the first of these was the Florida Resource-Use Education Advisory Committee, headed by a co-ordinator and backed financially by a grant from the General Education Board plus contributions from state sources in the form of personnel and services. This committee included representatives from colleges and universities, the State Department of Education and from various other state agencies concerned with human and natural resources. Successor to this Committee is the present Florida Resource-Use Education Committee, appointed by the governor of the state. Representation has been broadened to include appropriate federal agencies. At least four members are geographers, each representing a college or university. A geographer is chairman.

The functions of this Committee are many. The pooling and coordination of educational effort is of major significance. A checklist has been made of suitable Florida resource-use materials available for distribution.[6] Agencies are stimulated to produce additional needed educational literature by translating scientific findings into layman's language. Meetings of the Committee are held on various college and university campuses and consultant services offered to such institutions. Attention is given to such matters as major resource-use problems of the state, teacher certification re-

[6] This list may be secured without cost from the Florida State Department of Education, Tallahassee, Florida.

quirements, and reports on what educational institutions and agencies are doing and can do to assist resource-use education both in and outside the schools.

A major gain is a better understanding and a larger degree of co-operation among the agencies and institutions involved. The "practical" agency representative finds the geographer less "impractical" than he thought; they both discover they have much in common. One outcome in the case of Florida State University has been the establishment of an internship arrangement with state and federal agencies for geography students concentrating in conservation. The geography department gives the credit and helps plan the program; the agency provides the opportunity for students to study and participate in the work of the agency. The arrangement is mutually advantageous and will, we hope, lead agencies to recognize the value of having geographers on their staffs.

The local community aspect. As part of the Florida program geography departments in the two state universities have conducted workshops and extension classes in local centers. This work usually begins with an intensive study of the local county unit (because material is readily available by counties). This survey involves population information and trends, various industries using resources, facts and relationships concerning natural environmental factors and the interrelationships between people, industries, natural environment, and institutions—in short an enriched and expanded treatment which is at core geographic. Field study is an integral part of this survey. Participation is not confined to in-service teachers and other school personnel alone, but reaches out thru interviews and requests for assistance to business men, farmers, journalists, civic club members, and others. Often these people are in regular attendance at class meetings. Qualified agency representatives such as the soil conservationist, the county agricultural agent, and the district forester contribute their services in class meetings and on field trips. After the community has been studied, attention is given to ways in which the elementary and high school programs from grades one thru twelve can be modified and re-vitalized thru the use of the knowledge gained from the course. At this point the scope of the term "community" is broadened and a look taken at the total geographic offerings of the school system.

A geographer who has served as leader of this type of study acquires a broader outlook, some excellent first-hand experience of how communities operate, and a real grasp of the problems facing communities and schools. This is the grass roots part of the job.

The materials producing phase. Most southern states have produced some kind of educational material as part of their resource-use education programs. In Florida a text called *Florida: Wealth or Waste?* was produced for use with the ninth grade in mind. It has since been supplemented with a color-sound film by the same name. Both have a strong geographic slant and both have been used in various ways and on various levels, even in colleges and universities, because they are the only organized treatments of the subject they cover. Again geographers took the lead in providing the core ideas and in directing the production of these materials. By so doing they gained power in converting into useful new forms their philosophy and thinking.

SUMMARY

In summary the gains realized by the geographer from resource-use education are:

1. The opportunity to help shape educational policies and programs involving his subject at every level and even among adults outside of school.
2. The stimulation of contact with many other people interested in similar educational goals.
3. Some experience in co-operative planning and execution of plans.
4. Acquaintance with the work of various state and federal agencies whose interests are related to his own.
5. Experience in applying to actual county and state situations and problems the theories and information dealt with in the classroom and in research.
6. Skill in translating geographic philosophy, ideas, and information into new materials to meet new purposes.
7. A wide acquaintance over the state among local school personnel and agency workers that has high public relations value in the best sense because it grows out of a program recognized as vital and effective.

TREES TO LUMBER: A PROJECT

WALTER H. BECKMAN
Washington School

A teacher traveling during the summer may get many ideas on projects for the coming school year. In my case, a trip thru upper Wisconsin and Minnesota brought the idea of a project on "Iron Ore and Steel" which was completed in the fall semester and one on "Trees to Lumber" which was concluded the latter part of April, 1951.

After a discussion in 7A Junior High School geography classroom at Washington School in Fort Wayne, Indiana, about vacations of the pupils as well as of the teacher, certain topics such as lumber, were discussed. "What could we, the class, do to make our study of lumber more interesting?" "Would lumber companies send us material if we wrote to them?" Probably they would if we showed evidence of desiring knowledge and presented specific questions to which we wanted answers.

QUESTIONNAIRE

The 37 pupils in the 7A class were divided into groups of five or six each. Then, each group elected its own chairman and had him write down all the questions his group would like to have answered. Naturally, some groups handed in more questions than others. Two pupils were appointed to compile questions. After duplicate questions had been discarded, 44 remained. Then, the teacher duplicated several copies of this questionnaire.[1]

After the questions were compiled, two boys volunteered to go to the public library technical division where they obtained for the class the names and addresses of approximately 45 lumber companies to which the class could write.

The English teacher had agreed to teach the proper form to be used in writing business letters. Correct grammar, spelling, and penmanship were also emphasized. In each letter a questionnaire was enclosed. Naturally, these letters written for the purpose of receiving answers to their questionnaire greatly increased the interest of the pupils in trees and lumber.

The boys asked many questions about various phases of lumber in their industrial arts class. The industrial arts teacher volun-

[1] See last centerhead in article.

teered to allow the 18 boys in the class to decide on a special project in wood, which they might place on exhibit some time later.

Four or five days after the letters were mailed, replies started to come and they continued coming for a month. The pupils showed unusual interest in the letters and read each to the class. Some companies referred the class to other companies for pamphlets, samples of wood, and other material which aided their study very much. Of the 38 companies to which letters were sent, 31 answered. It was agreed beforehand that all materials received became the property of the classroom for future use. Eight of the companies took time to answer each of the 44 questions, while other companies confined their answers to the questions which were in their particular line of business. One company in the South sent the class 26 pieces of molding used in building homes and other buildings. Two companies referred our questionnaire to university professors. These were Professor Emmanuel Fritz, Professor of Forestry at the University of California and Professor Howard Michaud, Professor in the Forestry Department of Purdue University. Another lumber company was kind enough to send the class 38 mimeographed copies of the questionnaire with answers following each question. After the unit was completed the children were eager to take a questionnaire with its answers home, altho our study of the questionnaire did not always show that these answers were what the class thought correct.

PROJECTS

After all replies from the companies were received, it was noted that the pupils have over 120 different pamphlets, graphs, and charts, from which to gather answers. These materials suggested ideas for projects. Most of the boys preferred to work on wood projects in their industrial arts class. Some of the things they made were a bird house, a model boat, broom holder, special bookends for geography books, smaller bookends with art designs painted on the ends, rope winder, model church, wooden potter wheel, peg game, baseball game, paper spindle, house number plate, and a lamp base. The latter was beautifully constructed. The industrial arts teacher loaned us for study and display samples of 48 types of wood with their uses mounted on a large piece of plywood.

The girls also made many beautifully colored projects. Two girls drew and painted a cross-section of a gigantic Sequoia tree with historical dates showing the diameter of the tree at each of

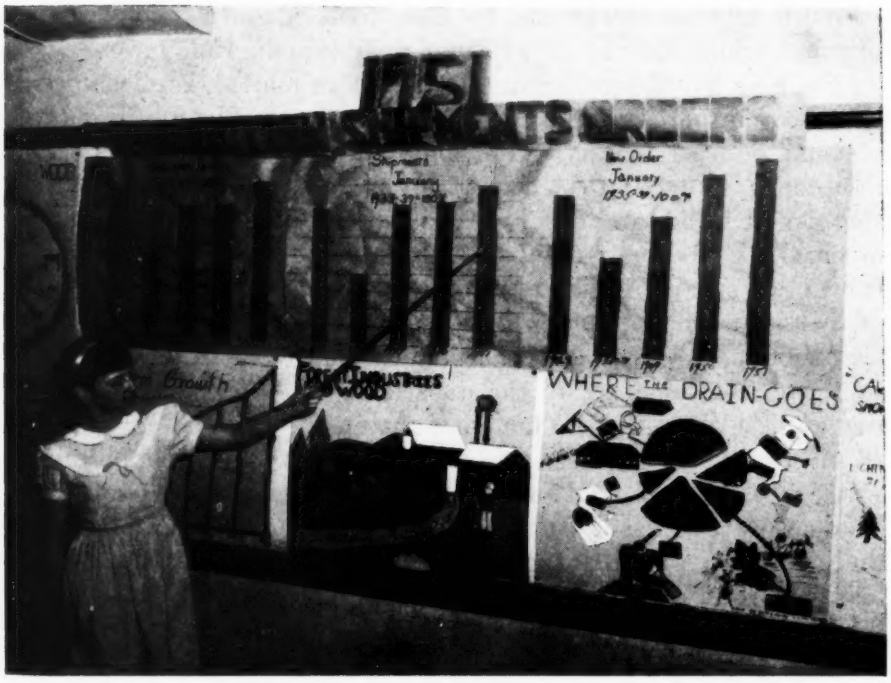


FIG. 1. This girl points to graphs which show that in January, 1951, lumber production, shipments, and new orders were greater than they have ever been.

the various dates from its estimated beginning, 2000 B.C., until the Korean conflict. Other colorful projects consisted of a cross-section of logs split up into six or seven parts showing the "Causes of Fire," "Where the Drain Goes," "Uses of Wood," "How Fire Ruins Wood," and the like.

Boys and girls both worked on bar graphs showing "Exports and Imports of Lumber from Leading Countries," "Production, Shipments, and Orders in January, 1951" (Fig. 1), "Forest Protection" (showing the 48 states with their protected and unprotected area), and "Lumber Production." Also circle graphs were made to show how much of the earth is used for forests, farms, pasture, etc. Two boys made a poster showing the five steps necessary in planting a seedling with a mattock. The pupils learned the method of measuring the number of logs in a tree by using a Biltmore stick as demonstrated in another project. A long vocabulary list of new words encountered in connection with lumber was prepared and studied.

OTHER VISUAL AIDS USED

In addition to the projects which the class made, other visual aids were used. From the West Coast Lumbermen's Association one pupil received a free filmstrip entitled, "The Story of West Coast Lumber." We also used a sound film from the Fort Wayne School Library entitled, "Lumber for Houses." After these visual aids were seen the class had an interesting discussion of the problems involved in lumbering. The boys especially were very much impressed by the rugged life of a lumberman. One valuable use of these aids was that the children were able to find answers to some of the questions in their questionnaire.

GROUP ACTIVITIES

The pupils spent about two periods a week in seven small groups using the pamphlets, charts, and other material received from the lumber companies, as well as their geography textbook and world encyclopedias, to work out the correct answers to their questionnaire. After each group had answered most of the questions, they compared their answers with the ones they received from the lumber companies. We considered the lumber companies the "experts" and the pupils the "amateurs."

After much discussion one girl was elected to fill in a questionnaire with the answers thought to be correct as decided by the class. This proved to be a very interesting and educational procedure because the members of the class discovered that not even all the so-called "experts" agreed on the answers to the questionnaire. Over certain questions much lively discussion resulted before conclusions were drawn.

A CLASS TRIP

During this six weeks' study a trip by chartered bus to the largest lumber company in Fort Wayne was arranged thru the help of two boys in the class and their geography teacher. One afternoon the lumber company arranged for a guide to take the class thru the factory where about 15 different lumber machines and operations were explained (Fig. 2). Snapshots were taken by the principal of these various operations as the class went thru the factory. Later, another guide escorted the class thru a large storage building where over $100,000 worth of lumber was stored. Great interest was shown in a new modern lift-truck which slid

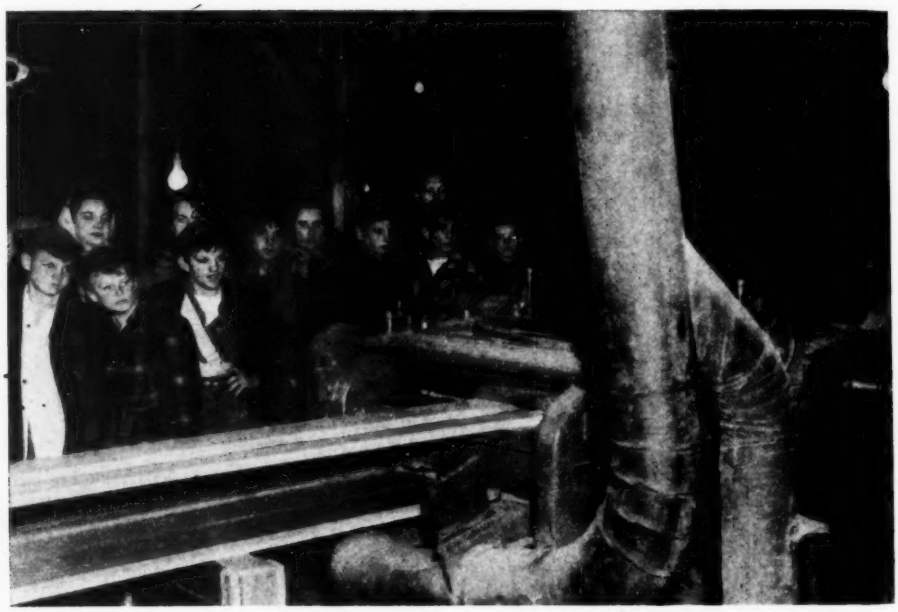


FIG. 2. Junior high school pupils are observing a planer in operation on their trip thru a local lumber company.

FIG. 3. Before the program the 7A pupils inspected the various lumber projects which they made.

under piles of lumber and lifted four or five tons at a time up on the shelves. It was a great manpower saving device. One of the boys made a large colorful drawing of the lift-truck, and he described its operation in our program.

PREPARING A PROGRAM

With all this material, projects, and experiences, the class was requested to give a program of their study to a joint PTA meeting of five local schools with our school superintendent, Dr. Merle J. Abbett, as principal speaker following the program (Fig. 3). In three weeks time the English, geography, and industrial arts teachers correlated their work together toward a successful program. The English teacher had the pupils do creative writing which they used in their program of choric and individual verse. Selections on lumber from "Snowbound" and other well known poems were used. In order to make the descriptions of the completed projects interesting the geography teacher chose two boys to take the leading parts in a 20 minute playlet which he planned. The playlet began with one of these boys taking the part of a new pupil entering Washington School and the other boy had been instructed to show him around the classroom and school. The auditorium became an imaginary classroom with all the projects posted on long bulletin boards placed on the stage as well as to the right and left of the stage. The connected story of the new boy kept the audience interested by his pretended amazement at the illustrated projects. The industrial arts teacher had the boys' wood work projects displayed on a table on the stage. These were also worked into the play. Other pupils told of their work and how their study of lumber had proceeded.

EVALUATION

The cooperation between the English, Industrial Arts, and the geography teachers was one of the crowning achievements of the success of the project; also the cooperation of the pupils with each other as well as the three teachers with whom they worked on one single unit was a stimulating and lasting educational experience.

QUESTIONNAIRE ON "FROM TREES TO LUMBER"

The 7A Class of Washington School have begun an extensive study of trees and lumber. The following questionnaire has been compiled by these 7A pupils working in

small groups. They would appreciate answers, as far as possible to these questions, or pamphlets, graphs, or maps, etc., which would help them in their study. Your aid would be of great educational service.

1. How is it determined what trees should be taken from the forest?
2. What forms of transportation are used to take the logs to the sawmill?
3. Where was the first lumber mill set up in the United States?
4. Where is the largest lumber camp in the United States?
5. Explain the process of lumber going thru a saw mill.
6. When and where was the largest saw mill established in the United States?
7. What is the date that the first lumber company began?
8. List five leading lumber producing companies in the world.
9. About how many companies are there in the United States?
10. In what state are the largest trees found?
11. How many different kinds of wood are there?
12. What is the most popular kind of wood used?
13. What is the largest tree ever cut?
14. What tree makes the best lumber?
15. How do trees help in conservation?
16. About how much wood is used in the United States?
17. What is the best wood for building houses?
18. What is the name of the hardest wood?
19. In what region is the hardest wood found?
20. What is the highest priced wood used for furniture?
21. What wood is used for wood pulp and then made into paper?
22. How can one tell the difference between hard wood and soft wood?
23. Why is plywood used?
24. Why isn't softwood used as much as hardwood?
25. In which country are there the most trees which could be used?
26. What state produces the most lumber?
27. Where is the most lumber in the world produced?
28. What country exports the most lumber?
29. What country imports the most lumber?
30. Name tools used in cutting lumber.
31. What causes a tree to split when it is "topped"?
32. During what time of the year are most of the trees cut down?
33. What does "tapping the trees" mean?
34. What is softwood mostly used for?
35. How does one become a lumberjack?
36. About how many lumberjacks are there in the United States?
37. About how many men work in the average lumber company?
38. How was lumber first used?
39. About how many hours a day does a lumber man put in?
40. How is charcoal processed from wood?
41. What danger is there of our lumber supply becoming exhausted?
42. In what ways is much of our lumber wasted?
43. Are prices on lumber fairly standardized thruout the United States?
44. Name five of the most common uses of lumber.

GLIDOGRAMS

OLGA SHARP STEELE
University of Nebraska

A glidogram is a puzzle which can be used to good advantage by geography teachers. Children enjoy creating as well as solving glidograms. Such puzzles should be used in teaching like pepper in soup, just enough to add flavor and not enough to spoil the broth.

USE

A puzzle is an interest-catching device. It has no place in a schoolroom if it has no teaching purpose. However, most puzzles lend themselves well to at least one of the following uses: 1. to emphasize important factual information; 2. to facilitate habit formation; 3. to provide locational exercises; and 4. to summarize or review. Glidograms can be used to point up three of those aims—factual information, locational or map work, and summary and review.

While many geography puzzles can be used as soon as a youngster has enough facts for comparisons, not so glidograms. They must be reserved until most of a class have arrived at spelling consciousness. They should probably not be introduced earlier than the fifth grade. Seventh and eighth grade pupils seem especially interested in this type of puzzle.

How glidograms serve the aims named above is illustrated by the different types given below. The first is essentially a locational or map puzzle. It may be used either for introductory purposes or in review. The creation of short glidograms like Number 2 is a simple class assignment. Numbers 3, 4, and 5 are review or summary types.

Puzzles are fun, for teachers as well as pupils. And they are useful. How about composing a glidogram to use in next week's lesson plans?

SOME GLIDOGRAMS

Each small x stands for a missing letter in a word. Write the words on your paper, using as a clue the meaning opposite each word, except for Number 5, which is self-explanatory.

1. Rivers of North America

xxxx N	is in Alaska.
xx O xxxxxx	separates the United States and Mexico.
xxxxxx Rx	is the largest tributary of the Mississippi.
xxxx T xxxxxxxx	drains the Great Lakes.
Hxxxxx	at its mouth is New York.
xxx Axxxx	flows thru a deep gorge in eastern Colorado.
xxxxMxxx	is an important salmon stream.
xxxx Exxxx	flows primarily in a northerly direction.
xxxx Rxxx	is of Grand Canyon fame.
xxxx Ixxxxxx	is known as the Father of Waters.
xxxxxx Cxxxxx	empties into Lake Winnipeg.
xxxxx Ax	on which Washington D. C. is located.

2. Rivers of Europe

Exxx	A short glidogram like this does not need explanatory phrases, altho they are not amiss. Children creating a glidogram should write the explanation.
xxx Uxx	
Rxxxx	
xx Oxx	
xxxx Pxx	
xxxx Ex	

3. Facts concerning Nebraska

Nxxxx xxxxxx	valley is the site of the most intensive irrigation in the state.
xExxxxxx	is the county seat of Gage County; windmills are manufactured there.
xxBxx xxxxx	is a state park; former home of a famous Nebraskan.
xxxRxxxxx	an important mineral resource of the state in recent years.
xxxxAxxxxx	type of legislature is unique in Nebraska.
xxxxxS xxxxx	is a national monument located in one of the western counties of the state.
xxxxxxK	is the largest city in the Elkhorn Valley.
xxxxxxxA	is a tributary of the Missouri River; flows eastward across the northern part of the state.

4. Facts concerning Nebraska

xxNxxxxx	a climatic feature Nebraska has more of than northern California.
xx Exx	is an important cash crop of the state.
x B & x	railroad has the most miles of track in the state.
xx Rx	Belt, a famous national crop region of which Northeast Nebraska is a part.
xx Axx	is a native vegetation both short and long.
Sxxx	is the chief resource of the state.
xxxxxxxxK xxxxxx	in Omaha is the second largest center in the United States.
x Axxxxx	is the most important industry in the state.

5. The eight largest cities in Nebraska (not in order of size)

xx Nxxxx
xx Exxxx
xxxxxx Bxxxx
xx Rxx xxxxxx
xx Axx
xx Sxxxxx
Kxxxxxx
xx Axx xxxxxx

ANSWERS TO GLIDOGRAMS

1. YukoN
RiO Grande
MissouRi
SainT Lawrence
Hudson
ArkAnsas
ColuMbia
MackEnzie
ColoRado
MissIssippi
SaskatChewan
PotomAc

2. Elbe
DanUbe
Rhine
RhOne
DniePer
ThamEs

3. North Platte	4. suNshine	5. LiNcoln
BEatrice	whEat	FrEmont
ArBor Lodge	C B & Q	ScottsBluff
PetRoleum	coRn	NoRth Platte
UnicAmeral	grAss	OmAha
ScottS Bluff	Soil	HaStings
NorfolK	livestocK market	Kearney
NiobrarA	fArming	GrAnd Island

LOCATION OF SCHOOLS—A PROBLEM IN EDUCATIONAL GEOGRAPHY

PAUL P. VOURAS
The Massanutten Academy, Woodstock, Virginia

The accelerated growth of our school population in the post-war period has accentuated several problems in the education system. One of the problems that confronts all persons responsible for the education of the children in any given community is the choosing of sites for the new school buildings.

The educators are becoming increasingly aware that the school facilities are now or soon will be quite inadequate to care for the school population. Many communities are finding new schools an absolute necessity and are going forward with plans for such construction. The importance of building an adequate school plant not only for the needs of 1950 but for those of 1960 as well, and of placing that plant on a site which is now and will be most convenient for the school children is apparent.

Especially in the latter problem, the selection of a suitable school site, the geographer can perform an immeasurable service to the community. The techniques of mapping employed by geographers can apply just as well in the analysis of a school location problem as in the analysis of factors which bear on the location of a manufacturing plant or a super-market.

These mapping techniques were applied to find a location for the new Meriden High School, in Meriden, Connecticut. Several maps were prepared showing items bearing on trends in the present and future development of the city, items bearing on population shifts and changes, and those bearing on relief features of the city.

FACTORS INVOLVED

Four main factors operate to determine the number and size of high school buildings and the size and location of sites. These include:

1. the probable density and distribution of school age children during the "life" of these buildings,
2. the available transportation facilities and the ease with which additional facilities may be provided,
3. the distance that must be walked to and from school,
4. the availability and adequacy of any contemplated site.[1]

A fifth might be added, namely, the ability of a community to pay for what it wants. In determining the location of a new high school building in Meriden, the first four factors have been taken into consideration.

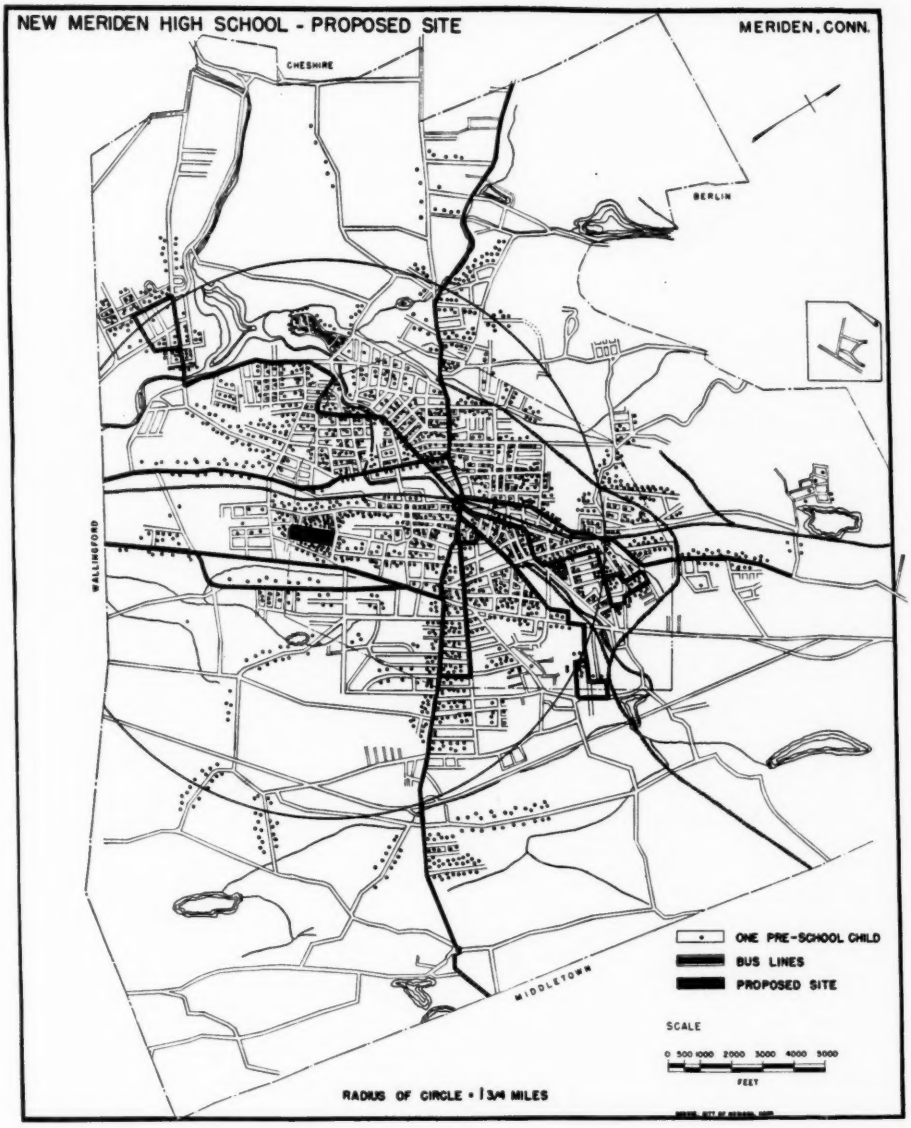
The present high school apparently was built without thought for possible future development. It was built to accommodate 750 four-year students, and its buildings were quite adequate for the academic program of that particular time.[2] Changes in educational organization have now made it obsolete. The plant consists of one main building and an annex, and is located in the approximate geographic center of the incorporated city. The location is good as far as transportation facilities and distribution of pupils are concerned, but it has many site and building disadvantages. The site-size is too small, and is so situated that the cost of physical expansion of the building would be excessive. Judged in the light of present day educational practice, the building is deficient in number of classrooms and those that do exist are poorly oriented; the corridors are too narrow for circulation of pupils; and there is inadequate provision for auditorium and gymnasia. Perhaps, however, the most outstanding defect of the site is the lack of sufficient space for playground and recreation.

PROPOSED SITE

The numbers and distribution of pre-school age children and the available transportation facilities have been used as the basis for a map showing the best location for the proposed senior high school building. Transportation was used as one of the factors because it may affect the density and distribution of the increasingly mobile population. At one time when only one high school was needed the logical site was in the downtown district, which was easily accessible to all those attending. Had a large site been provided, such planning would have been reasonable. Such, however, was not the case. Today, wherever possible, it is desirable to locate the school away from the congested sections within the city. Transportation

[1] Dudley, Leland L., *The Location of City School Plants*, Harvard University Press, Cambridge, Massachusetts, 1929, pp. 1-13.

[2] Office of the School Superintendent—Meriden, Connecticut.



facilities have been increased and improved, so that an outlying location is more accessible. A series of maps showing pre-school population, new housing developments, proposed street developments, and other changes in land use are valuable because they depict changes and trends that might affect the educational land use picture and, therefore, the location of new schools. More than one map is needed to show the cumulative effects of all these factors.

ACCESSIBILITY

It can be discerned from the "New Meriden High School—Proposed Site" map whether or not a suggested location for the new school can be reached by present and by potential high school pupils with the existing transportation facilities. The distance from the school building to the bus line which serves the area in which the school is to be located should not be more than two blocks. When free school transportation is not provided for high school pupils, it has been suggested by Holy that the maximum service area of the school be one and three-quarter miles.[3] The proposed site shown on the map can be reached without excess transfer; in fact, every pupil from any section of the city can reach the school by payment of only one fare. One problem with respect to the use of public bus lines by students is overcrowding during the time when people are going to and from work. A site such as the one shown on the accompanying map will not present such a problem. During the morning hours, workers will be coming to the center of the city, while students will be going away from the center. In the afternoon, students will be on the way home two or three hours before the workers finish their day's labor.

More than 85 per cent of the potential high school population lives in the area within the circle. Attention should be directed to the undeveloped parts of this area from which no pupils come. Based upon an analysis of trends in city growth derived from several other maps made in the study, the chances are that these undotted areas will constitute a section favorable to the future development. When this happens, the increase within the next ten years will be within the one and three-quarter mile distance from the proposed high school site. This conclusion is strengthened by the distribution of the building permits issued in Meriden during the past four years. The direction of housing development is toward the Meriden-Wallingford political boundary.

PHYSICAL AND ENVIRONMENTAL FEATURES

The writer visited several possible sites during the summer of 1950 to determine one that could meet the distribution and accessibility standards just stated, and could also possess an adequate available site. The Ceppa Field-Gale Terrace section of the city

[3] Holy, Thomas and Arnold, William, *Standards for the Evaluation of School Buildings,* Columbus, Ohio, Ohio State University Press, 1936, p. 4.

provided a site 1. on which the relief is relatively low, 2. where the requirement of a site-size of more than 15 acres, which has been stated by Holy as adequate for a school plant with a population of 1,500 pupils,[4] is met, and 3. which can be had for a small initial investment.

There is a gradual slope to the west of the site. This, however, will not affect the over-all setting. The area is presently occupied by the Ceppa Field and Gale Terrace Housing Development. This is a temporary project which was started during the war period with the understanding that it would be torn down upon completion of better housing in some other suitable area of the city. The field is owned by the city and the needed land can be purchased at a reasonable price. The site is well situated and large enough to allow for the proper placing of buildings. With the tendency toward the erection of large plants, a building site of more than ten acres must be provided.

According to modern educators, the environment of a high school plant should promote the moral and aesthetic development of the children, particularly, and also give a "lift" to the parents of these children. The proposed site is situated in a residential section away from such undesirable features as business blocks, railroad yards, manufacturing plants, dense traffic intersections, unsightly swamps and dumps with unpleasant odors, disturbing noises, and gasoline stations. It is a favorable environment for the development of children. It would seem, then, that from all points of view the site is the best available.

SELECTED BIBLIOGRAPHY

Dudley, Leland L., *The Location of City School Plants,* Cambridge, Harvard University Press, 1929.

Eisen, Edna E., *Educational Land Use in Lake County, Ohio,* Ph.D. dissertation, Department of Geography, University of Chicago, University Press, 1948.

Engelhardt, Nickolaus, and Engelhardt, Fred, *Planning School Building Programs,* New York, Bureau of Publications, Teachers College, Columbia University, 1930.

Gross, Herbert Henry, *Educational Land Use in the River Forest-Oak Park Community,* Ph.D. dissertation, Department of Geography, University of Chicago, University of Chicago Press, 1948.

Holy, Thomas and Arnold, William, *Standards for the Evaluation of School Buildings,* Columbus, Ohio State University Press, 1936.

Philbrick, Allen K., *The Geography of Education in the Winnetka and Bridgeport Communities of Metropolitan Chicago,* Ph.D. dissertation, Department of Geography, University of Chicago, University of Chicago Press, 1949.

Strayer, G. and Engelhardt, N., *School Building Problems,* Bureau of Publications, Teachers College, Columbia University, New York, 1927.

[4] *Ibid.*

NATIONAL COUNCIL AT WORK

INCREASING THE EFFECTIVENESS OF THE NATIONAL COUNCIL

By the Work of Administrative Committees. 1. *Planning Committee:* The Council first set up a Planning Committee four years ago composed of Mrs. Katheryne Thomas Whittemore, chairman, Alice Foster, and Thomas F. Barton. This committee formulated a program of projects, publications, and other duties that have either now been completed or are being completed by Project Committees. At the annual meeting of the Executive Board on November 22 in Pittsburgh, it was decided to make the Planning Committee a permanent Administrative Committee and Section 6 of the By-Laws has been amended as follows: "The Planning Committee shall consist of four members, one of these, the chairman, to be elected for a term of three years by the Executive Board, the other three members to be the three most recent past presidents. The President and the Secretary of the National Council shall be ex-officio members. The Planning Committee shall formulate an orderly plan for projects, publications, and other matters that further the aims of the organization, and present these plans to the Executive Board for consideration."

Since the Board meeting, Miss Zoe A. Thralls, University of Pittsburgh, has accepted the chairmanship of the committee for a period of three years. The three most recent past presidents who will serve with her for the coming year will be: Loyal Durand, Jr., Earl B. Shaw, and Thomas F. Barton.

2. *Publications Committee:* Since early in 1947, the National Council has had a Publications Committee. For the past three years, it has been composed of Miss M. Melvina Svec, chairman, Henry J. Warman, and Loyal Durand, Jr., and Thomas F. Barton. This committee, during its term of office, undertook the publication of *Geography in the High School,* and the publication and distribution of Professional Papers 9, 10, 11, 12, and the *Map on World Air Transportation Routes.* The publication of these items was made possible thru the establishment of a Publications Fund built up thru Contributing Memberships. The Map and Professional Papers 11 and 12 have been distributed as bonus publications to new and long-standing members of the Council.

The Executive Board has now decided to make the Publications Committee a permanent Administrative Committee and has further amended Section 6 of the By-Laws to read: "The Publications Committee shall consist of three members to be elected by the Executive Committee for a term of three years. The Editor of the JOURNAL OF GEOGRAPHY and the Secretary of the Council shall be ex-officio members. The Publications Committee shall edit or oversee the editing of material approved for special publications by the Executive Board and make necessary arrangements for publication and distribution."

Since the annual meeting, the new Publications Committee has been set up with Professor John Strietelmeier, Valparaiso University, as chairman; Laura Kahler, Silver-Burdett Company, Chicago; and George Miller, Indiana University. All three have had extensive experience in editing and publishing manuscripts. Mr. Strietelmeier, at present, is editor of *The Cresset,* a Lutheran publication.

3. *Research Committee:* The National Council has long been interested in furthering research in geographic education. For this reason it has established a Research Committee (1937) and a Research Fund from which awards may be granted to those wishing to undertake such research. The Research Committee for 1952 is composed of: Clyde F. Kohn, Chairman; Earl B. Shaw, William Berry, and Henry J. Warman, with John H. Garland, ex-officio.

4. *Distinguished Service Award Committee:* The National Council recognizes those who have contributed in some outstanding way to the improvement of geography

teaching by making an award, from time to time, to such persons. The Committee was first established in 1931. Its membership for 1952 includes: George B. Cressey, Syracuse University, chairman; J. Russell Whitaker, Otis W. Freeman, George J. Miller, and Mamie L. Anderzhon. Anyone wishing to nominate a candidate for the Award in 1952 are urged to write to Professor Cressey immediately, giving in detail the qualifications of the person so nominated.

5. *Committee on Inquiries:* In order to serve members of the Council more effectively the Executive Board maintains a committee of one to answer inquiries on the availability of materials, curriculum problems, and the like. Fred K. Branom, Chicago Teachers College, has agreed to act in this capacity for the next three years.

6. *Director of Public Relations:* This officer for 1952 will be Mamie Anderzhon, 112 North Marion Street, Oak Park, Illinois. She will publicize the work of the Council and make specific announcements from time to time concerning its various activities and publications.

7. *Nominating Committee for 1952:* Each year nominations for officers and members of the Executive Board are presented to the General Assembly by a Nominating Committee. The Committee for 1952 is composed of M. Melvina Svec, chairman, William Berry, and Cora Sletten. Their slate of officers will be announced in the May issue of the JOURNAL. Members are invited to send suggestions to Miss Svec immediately.

8. *Membership Committee:* In order to increase the membership of the National Council the Executive Board this year established a Membership Committee. The chairman of this committee will be Ina C. Robertson, and she is at present organizing "field marshalls" for the several regions of the United States. The complete roster of this committee will be announced in a future issue.

9. *Other Administrative Helpers:* During 1952, Clyde F. Kohn will continue as Co-ordinator of NCGT-NCSS affairs; Mamie Anderzhon of NCGT-NEA; Fred Dohrs of NCGT-UFPA. Miss Mary Viola Phillips will act as chairman of the Resolutions Committee. Professor Earl Shaw will complete the revision of *The National Council as a Working Organization.*

Clyde F. Kohn
President

GEOGRAPHICAL PUBLICATIONS

Val Hart. **The Story of American Roads.** William Sloane Associates, Inc., New York, 1950. 238 pages, 42 illustrations, 4 maps. $3.

To teachers of history or geography who have searched long for more material on some famous road merely mentioned in the text this book will be a boon. From the earliest roads which helped the pioneers travel from one settlement to another, thru to our own day, Mrs. Hart has carefully investigated source material. Moreover, she has reported her findings in such interesting form and has introduced so many incidents of the road that pupils will read without urging. The illustrations give us a feeling of great sympathy for early American travelers and help us to realize why few ventured far from home. The book is full of interest for adults.

The author says this is a story of why and how our roads were built and of the men and women who traveled along them. From the Boston Post Road, along which colonial postmaster, Benjamin Franklin boasted he could send a letter from Philadelphia to Boston and receive a reply in three weeks, the book takes us to the "tobacco rolling" roads of Virginia. Along the Atlantic coast farther south were roads where stage coaches frequently mired down and all aboard had to get out and help extricate horses and coach.

We may cross the mountains in Kentucky by the Wilderness Road or cross by the National Road in Pennsylvania. We may spend days on the Erie Canal. Farther west we follow the Santa Fe, the Oregon and the Mormon trails with all their hardships. Finally we may take a look at the Pan American Highway in the making. Mrs. Hart has covered the long span of years from the time when 53 miles a day was considered a breakneck speed for a stage coach to the day when 50 miles an hour is considered a normal speed for an automobile.

Iowa State Teachers College ALISON E. AITCHISON

Florida: Wealth or Waste? (compiled and edited by Mr. Henry Becker, Miss Gladys Fawley and a group of school teachers and principals). Florida State Department of Education, Tallahassee, 1946. xix and 210 pages, 216 illustrations and tables.

This text, *Florida Wealth or Waste?* spotlights a state problem of first magnitude—how to improve the levels of living thru wise use of both human and natural resources. It presents problems dealing with the people and their activities, the available natural resources, the way people are using the total resources in the state, and the problems arising from their use.

The manuscript for this textbook was prepared by a group of 11 public school teachers and principals under the direction of two college instructors. Other persons and agencies who gave editorial assistance and furnished illustrative materials are listed.

The comprehensive scope of this small volume is indicated by the fact that it includes a Foreword, List of Illustrations, Table of Contents, Suggestions for Teachers, Materials of Instruction, Possible Teaching Approach, and an Index. Two hundred pages are devoted to 13 chapters. The chapters follow customary lines and should be intelligible to any secondary school student.

An outstanding feature of the volume is the 36 tables, 25 graphs, 75 pictures, and 66 maps. The maps cover a wide range of geography from natural resources and climatic conditions to population, industrial production, crops, and transportation.

Many activities which require pupil participation and pupil-teacher planning have been suggested thruout the text. Problems facing Florida with emphasis on the local community have been suggested for group and panel discussion. The activities provide opportunities to meet the needs of the student, the community, and the teacher.

This book is a valuable contribution to literature on conservation and will be a very useful text for all teachers and students of the subject, especially those in the secondary schools in the state of Florida.

New Kensington Senior High School MARY VIOLA PHILLIP.
New Kensington, Pennsylvania

G. W. Robinson.[1] **Soils, Their Origin, Constitution and Classification: An Introduction to Pedology.** (Third Edition). John Wiley & Sons, Inc., New York, 1951. 573 pages, illustrations. **$5.**

In his preface to the 3rd edition of his excellent book, "Soils," Robinson says: "My original aim was to exhibit the soil in perspective, and I hope that in the present edition the subject—so much greater and more complicated than it once appeared—may still thus be seen." In another place he points out that his book is not a mere compilation of facts—a "photograph," so to speak—but is, rather, his "picture" of the soil. Readers

[1] Deceased, May 1950.

will find this picture masterfully drawn, by a man who was at once a scholar, a scientist with world-wide field experience, and a competent author.

Professor Robinson presents the various sides of controversial interpretations of fact before expressing his own viewpoint. As he says in the preface to the 2nd edition: "Another pedologist might arrange the same facts in a different perspective and produce another picture. The reader who views these different pictures may be counselled to adopt the attitude of the great English Prime Minister who, when confronted with contradictory pronouncements by his colleagues, 'marvelled not so much at the diversity of testimony as at the many-sidedness of truth.'"

The excellent presentation in the earlier chapters of the book of the basic chemistry of soils is evidence of Robinson's primary interest in agricultural chemistry. While these chapters deal with soil chemistry and with physical-chemical characteristics of clay fractions of soils, it is so written that those who have only a basic training in chemistry can understand it. Thus, it is especially useful to pedologists whose work and training have been concerned mostly with morphology and genesis of soils and with mapping soils in the field.

The book contains twenty chapters with the following titles: "Introductory," "General View of the Constitution of the Soil," "Soil Formation: The Parent Material," "Soil Formation: Profile Development," "The Clay Complex," "Base Exchange and Other Reactions of the Colloidal Complex," "Soil Organic Matter," "General Physical Properties of Soils," "Water Relationships of Soils," "Soils of the Podsolic Group," "Chernozems and Their Related Groups," "Hydromorphic Soils and Peats," "Saline, Alkaline, and Soloti Soils," "Soils of the Humid Tropics and Sub-Tropics," "Soils Associated with Calcareous Parent Materials," "Classification of Soils," "The Geography of Soils," "Soil Surveys," "Soil Analysis," and "Soils, Plant Growth, and Agriculture."

Robinson is more concerned with introducing the beginner "to a new and fascinating subject" than he is with trying to present a mass of technical detail. His viewpoint, centered in the British Commonwealth of Nations, has enabled him to succeed remarkably well in achieving his objective. He draws examples from most of the major countries, and especially from the United States, of which he had first-hand knowledge. The Index of Places shows 156 references to Great Britain; 119 to twenty European countries, including Russia; 32 to eleven countries of Asia; 85 to Africa; 63 to North and South America, outside the United States; 125 to the United States and possessions; and 14 to Australia. The book is illustrated with a few well-chosen plates (chiefly photographs); a schematic soil map of the world; 22 figures; and many tables.

The new, much-improved edition of Robinson's book appears at an opportune moment, when mutual interests in soils on the part of pedologists, geographers, Pleistocene and engineering geologists, and ecologists is at a high point. People in all of these fields will find the book to be a useful introduction to an understanding of the soil.

JAMES THORP

Division of Soil Survey
United States Department of Agriculture

John C. Weaver and Fred E. Lukermann. **A World Statistical Survey of Commercial Production: A Geographic Source Book.** Burgess Publishing Company, Minneapolis, 1950. 146 pages. $4.

This manual is designed to present basic data on the physical and human resources and the productive capacity of the commercial world. While the authors hope that the volume will be a useful tool to many persons, it was primarily designed for college students in courses dealing with commercial aspects of economic geography. When used

by students it is hoped that they will not have to memorize the long columns, but that they can be led to build general impressions of the geographic orientations of production which will lead to analysis and interpretation.

The volume is divided into seven major parts—population and land resources, sources of power, metallic minerals, non metallic minerals, forests and fisheries, agricultural crops and agricultural livestock. There are 140 different tables. There is data for essentially every major agricultural and mineral product produced. Data on manufacturing industries have not been included. The data are usually presented by country or region of production for each commodity. For most of the charts the years for the data presented are 1927, 1932, 1937, 1943, 1947 and occasionally 1949. There is an excellent and wide selection of data for each of the commodities. For example, the following information is given for petroleum—world crude petroleum production 1927-1949 with percentages produced by each country; world refining data on each country including crude runs to stills, refinery capacity, number of refineries; daily and annual well production; United States crude petroleum production by district and state including imports and exports and method of transportation; world and United States petroleum reserves; and distribution of United States crude petroleum.

The source for each of the charts is indicated and special information is presented in brief notes. There is no textual material in the manual. A general bibliography of statistical references is included. There are also 14 specially drawn outline maps of selected areas of the world which are for plotting the data of the volume. This manual brings to the geographer a great mass of data found in a wide variety of sources. There are few reference books for which the geographer will find greater value or will be used as often.

E. WILLARD MILLER

Pennsylvania State College

Douglas L. Oliver. **The Pacific Islands.** Harvard University Press, Cambridge, 1951. 313 pages, 30 illustrations. **$5.**

The task of writing an economic and cultural history of the Pacific Islands without being encyclopaedic is a remarkable feat, but Professor Oliver does it within the space of one volume with consummate skill and adroitness.

To a geographer, the book's main value lies in its excellent generalizations of the areal differences (both physical and cultural) in the island groups that lie between Indonesia and the west coast of the Americas, and in the discussion of problems of maintaining natural balances between man and "land."

The central theme is the sordid story of the impacts of Western civilization on the brown and black peoples of the Pacific Basin, in the various physical and cultural settings, and from the time of the earliest voyages of exploration to the post-World War II trusteeships. The story is not a pleasant one. Not a historian, the author does not hesitate to make a few cautious predictions of possible future events in this part of the world.

The future of the native peoples on these islands presents a complex problem to our world citizenry. The long period of exploitation is almost over, and while international morality is proceeding slowly to alter the inherited abuses in the area, it has not yet decided the proper course of action in the future. Oliver, the anthropologist strongly hints that the earlier primitive cultures had developed a remarkably well-balanced and efficient man-land ratio. Oliver, the cultural advisor however, realizing that the old native cultures can never return in pure form, recommends that the island people eventually must become world citizens, and presents strong arguments for wisdom, patience, and tact in the inoculation process. Surely our "civilization" has a debt to pay to these island folk. The question is how to pay it!

Harpur College, Endicott, New York JOSEPH E. VAN RIPER

J. Riley Staats and George Elberon Harding. Elements of World Geography. D. Van Nostrand Company, Inc., New York, 1951. vi and 378 pages, 79 plates, 68 diagrams and graphs, 36 maps. $4.25.

This book has a very usable format, easily read print, unusually clear pictures, and well executed maps and graphs. Altho at first glance some of the pictures may seem rather small, they are adequate. All pictures, maps, diagrams, and graphs are relevant to the content being discussed.

The purpose of the book is well stated by the authors as being a text for a one semester course intended to give the principles necessary as background "for further study in the field of geography and prepares the student for the experiences of living." To achieve this purpose the authors have stressed the physical approach. However, they have incorporated enough of the human phase to give a well balanced presentation in logical sequence. Included are discussions of such topics as the field of geography, the earth as the home of man, maps and their uses, the atmosphere, weather and climate, terrestrial windbelts and modifications of them, climatic regions of the earth, bedrock, land forms, soils, minerals, and water bodies.

Teaching aids include a table of contents giving subheadings, well captioned illustrations, selected bibliography at the end of each chapter, footnotes thruout, selected questions for each chapter placed at the back of the book, and an adequate index.

The critical reader may object to a lack of fluency in the presentation of some parts but a revision by the authors can remove such criticism. Also, some may feel an omission of explanatory statements following sentences such as the one on page 337: "Currents moving poleward are relatively warm, and those moving equatorward are relatively cold." One may raise the question of why the currents are warm or cold. Such sentences are not in the majority and may well cause the good student to read more widely. The discussion of the climatic regions of the earth is exceptionally well done.

The authors have kept the book very readable for those for whom it is intended, namely those students in the introductory course in college geography.

Western Michigan College of Education CYRIL L. STOUT

The Britannica Book of the Year, 1951 Edition. Encyclopaedia Britannica, Inc., Chicago, 1951. xxxi and 768 pages. $12.

This is a richly illustrated record of world events in 1950 but it is far more than that.

It is actually a compact guide to world affairs in their historical and geographical setting, with special reference to developments in 1950 and the immediately preceding years.

If you want to know, let us say, about Kashmir, you will find a succinct statement of location, population, and area, a sketch map, and a compact history in some 850 words. Or, you may want data on the iron and steel industry. If so, you will find that in six tables, one graph, a picture, and appropriate text.

Children, and young adults too, are unlike their elders in being in no particular mental groove. They ask a thousand and one questions, a large proportion of them answerable with the aid of this yearbook. If it is baseball, you can turn to page 98 of this book; if lacrosse to page 411; if swimming records, to page 658.

Names make news, and also raise questions. So whether you are interested in John L. Lewis, President Perón of Argentina, or President Truman, you can find up-to-date information here.

This handy volume is a handsome book. It is printed with relatively large type, has clear pictures, and is beautifully bound, a book to grace the reference desk of any classroom or library.

George Peabody College for Teachers J. RUSSELL WHITAKER

BOOKS AND PAMPHLETS RECEIVED

Herman Schneider. **Everyday Weather and How It Works.** Whittlesey House, McGraw-Hill Book Co., Inc., New York, 1951. 189 pages, illustrations, index. $2.75.

Valparaiso Master Plan: A Guide for Future Community Development. Prepared by Lawrence V. Sheridan, Planning Consultant, for Valparaiso City Plan Commission, 1951. Diagrams and charts. $1.

William H. Connor, Burnett Cross, Hubert Evans, Harold Tannenbaum. **Electric Power and Social Policy.** Bureau of Publications, Teachers College, Columbia University, New York, 1951. 53 pages, illustrations, bibliography. 75 cents.

Alison E. Aitchison. **Water We Use and Misuse.** Conservation Bulletin No. 3, Issue No. 13, September, 1951. Iowa State Teachers College, Cedar Falls. 28 pages, illustrations. 25 cents.

Edwin H. Beachler.**Growing Pains in the Suburbs: The Story of Metropolitan Pittsburgh's Building Room.** The Pittsburgh Press Co., Pittsburgh, Pennsylvania, 1951. Illustrations. 20 cents each or 10 cents each in bulk orders of 50 or more.

Resources and Policy: Current Issues in Conservation, A Symposium. Edited by Lee S. Greene and René de Visme Williamson. (Reprinted from *Journal of Politics*, Vol. 13 No. 3, August, 1951.) Kallman Publishing Company, 1638 W. University Ave., Gainesville, Florida, 1951. 168 pages, paper bound. $2.

Joseph Gentilli and Rhodes W. Fairbridge.**Physiographic Diagram of Australia.** The Geographical Press, Columbia University, New York, 1951. 40 cents. Chart sheet, 15 cents.

L. Harang. **The Aurorae.** John Wiley & Sons, Inc., New York, 1951. x and 166 pages, illustrations, bibliography, index. $4.50.

T. G. A. Muntz. **Turkey: Economic and Commercial Conditions in Turkey.** Philosophical Library, Inc, New York, 1951. x and 194 pages, maps, charts.

Richard Joel Russell. **Louisiana: Our Treasure Ground.** Bureau of Educational Materials, Louisiana State University and Agricultural and Mechanical College, Baton Rouge, 1951. 149 pages, illustration.

Edwin S. Munger. **Relational Patterns of Kampala, Uganda.** University of Chicago Press, Chicago, 1951. xi and 165 pages, 7 tables, 44 photographs, 18 maps, bibliography. $2.

Rand McNally Cosmopolitan World Atlas (New Census Edition). Rand McNally Company, Chicago, 1951. 376 pages. $12.50.

Leonard S. Kenworthy. **Asia in the Social Studies Curriculum.** Department of Education, Brooklyn College, Brooklyn, New York, 1951. 44 pages, bibliographies, lists of films and filmstrips. 50 cents. 12 copies, $5.

F. S. Bodenheimer. **Insects as Human Food.** Dr. W. Junk, Publishers, The Hague, Netherlands, 1951. 352 pages, illustrations, bibliography.

Rafael Picó. **The Geographic Regions of Puerto Rico.** University of Puerto Rico Press, Rio Piedras, 1950. xiii and 256 pages, 174 illustrations, 12 tables, bibliography.

Charles Seymour. **Geography, Justice, and Politics at the Paris Conference of 1919.** (Bowman Memorial Lectures.) American Geographical Society, New York, 1951. iv and 24 pages. $1.50.

Marquette Planning Board, George N. Skrubb, City Planning Engineer. **Marquette, Michigan: City Plan.** City Clerk, Marquette, Michigan, 1951. 135 pages, charts, map. $5.

Course of Study in Geography for Secondary Schools: Progress Report, Bulletin 412. Department of Public Instruction, Harrisburg, Pennsylvania, 1951. xviii and 334 pages, photographs, charts, maps. $1.25.

A. W. Anderson and E. A. Power. **Fishery Statistics of the United States, 1948.** Statistical Digest 22, Fish and Wildlife Service. U.S. Government Printing Office, Washington, 1951. 305 pages, illustrations, charts. $1.25.